

### **REMARKS**

This is in response to the Office Action dated August 13, 2004, and the references cited therewith.

Claims 1 and 9 are amended, claims 7, 25 and 26 are canceled and claims 27-61 are withdrawn. Claims 1-6 and 8-24 remain pending in this application. Claims 1 and 9 are amended to more clearly define the claimed subject matter. It is believed that no new matter is introduced herein and that the amendments are supported by various portions of the specification, including, for example, the portions at page 2, line 26 to page 5, line 21.

#### **§112 Rejection of the Claims**

Claims 1-26 were rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Pursuant to M.P.E.P. § 707.07(g), piecemeal examination is to be avoided. The instant Office Action includes a rejection of claim 1 under 35 USC § 112, second paragraph, however, a previous rejection, under the same statutory basis, was silent as to claim 1. Applicant respectfully requests a complete examination with any valid rejections explicitly identified.

Claim 1 is believed to satisfy the requirements of 35 USC § 112, second paragraph. Applicant submits that claim 1 recites the subject matter with a reasonable degree of clarity and precision sufficient to apprise one of ordinary skill in the art of the scope. Applicant submits that the claim, when read as a whole, informs one of skill in the art as to the relationship between the various elements.

Applicant has amended claim 1 to clarify the recited subject matter. When read as a whole, it is believed that the scope of the claimed subject matter is reasonably clear in light of the specification, known art and the claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made. It is believed that express recitation of antecedent basis for the mass is not required since mass is an inherent component of an analyte (see M.P.E.P. § 2173.05(e)). It is believed that the amendments are supported by the specification and that no new matter is introduced.

Amended claim 1 provides that the structure resonates at a frequency based on the mass of the analyte and that the resonant frequency shift corresponds to a change in the mass.

As to claims 10 and 11, Applicant submits that the words and phrases are to be given an ordinary meaning unless the specification provides otherwise. Here, Applicant submits that the interpretations suggested in the Office Action are inconsistent with an ordinary meaning. The claims are to be read as a whole and in a manner that is reasonably clear to one of ordinary skill in the art.

It is submitted that the claims satisfy the requirements of 35 U.S.C. 112, second paragraph, and withdrawal of the rejection is respectfully requested.

§102 Rejection of the Claims

Claims 1-4, 6-9 and 11-21 were rejected under 35 USC § 102(b) as being anticipated by Ebersole et al. (U.S. 5,756,279).

Applicant respectfully traverses the rejection and submits that *prima facie* anticipation has not been established. Ebersole does not appear to describe the identical subject matter. For example, Applicant is unable to find, in Ebersole, a teaching or disclosure of a structure [that] resonates under ambient conditions at a frequency based on the mass of said analyte, as recited in claim 1. Instead, Ebersole refers, variously, to a piezoelectric oscillator (column 8, lines 36 *et seq.*) and excitation electrodes (column 8, lines 51-52) and appears silent as to resonance under ambient conditions. Ebersole, at column 4, lines 29-33, refers to "changes in the visco-elasticity, rigidity and acoustic and light wave propagational [sic] abilities of the analyte-responsive polymer film. Although changes in mass may occur, it is understood that the invention does not measure a weight gain." Thus, it appears that Ebersole does not appear to teach or disclose the recited subject matter.

Claims 2-4, 6, 8, 9 and 11-21 each depend, ultimately, from independent claim 1 and each recites additional subject matter in addition to that of the independent claim. For at least the reasons presented above, it is believed that dependent claims 2-4, 6, 8, 9 and 11-21 are in condition for allowance.

Applicant respectfully traverses the characterization of the claimed subject matter as presented on page 4 of the Office Action. In particular, the Office Action provides no

evidentiary support or reasoning by which the recited second portion and the recited immobilized portion can properly be characterized in the manner asserted. Furthermore, Applicant is unable to find, in Ebersole, a teaching whereby an optical sensor detects a resonance frequency shift. Withdrawal of the assertions is respectfully requested.

The discussion of Ebersole on page 5 of the Office Action does not appear to render the claimed subject matter anticipated. In particular, the Office Action refers to refractive index however the claimed subject matter refers to a resonant frequency shift.

For at least the reasons presented herein, reconsideration and allowance of claims 1-4, 6, 8, 9 and 11-21 is respectfully requested.

Claims 1-11, 17-19, 21-23 and 25 were rejected under 35 USC § 102(e) as being anticipated by Quate et al. (U.S. 6,436,647).

Applicant respectfully traverses the rejection and submits that *prima facie* anticipation has not been established. Quate does not appear to describe the identical subject matter. For example, Applicant is unable to find, in Quate, a teaching or disclosure of a structure [that] resonates under ambient conditions at a frequency based on the mass of said analyte, as recited in claim 1. Instead, Quate refers to deflection of the cantilever (column 4, lines 10-13). Applicant submits that Quate does not appear to describe the same structure or method of measuring resonance, as recited in the claims.

Claims 2-6, 8-11, 17-19 and 21-23 each depend, ultimately, from independent claim 1 and each recites additional subject matter in addition to that of the independent claim. For at least the reasons presented above, it is believed that dependent claims 2-6, 8-11, 17-19 and 21-23 are in condition for allowance.

For at least the reasons presented herein, reconsideration and allowance of claims 1-6, 8-11, 17-19 and 21-23 is respectfully requested.

§103 Rejection of the Claims

Claims 24 and 26 were rejected under 35 USC § 103(a) as being unpatentable over Quate et al. (U.S. 6,436,647) in view of Davis et al. (U.S. 6,311,557).

Applicant respectfully traverses the rejection and submits that *prima facie* obviousness has not been established. For example, Applicant notes that Davis, at column 3, lines 57-60, states that it is "based on the concept of changing the resonance frequency of a cantilever by changing its stiffness." In contrast to Davis, the claimed subject matter relates to a frequency based on the mass of said analyte, as recited in claim 1. Accordingly, Applicant submits that the combination proposed in the Office Action would require substantial redesign and reconstruction of Davis and therefore, according to M.P.E.P. § 2143.01, the proposed combination is improper.

In addition, the Office Action asserts that "it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided Quate et al. with the microcantilevers as taught by Davis et al. since the microcantilevers provide economical and convenience advantages in detecting analytes in samples." Applicant respectfully traverses and submits that the asserted motivation does not appear to be supported by the selected art. Withdrawal of the assertion is respectfully requested.

For these and other reasons, Applicant submits that *prima facie* obviousness has not been established. Reconsideration and allowance of the pending claims is respectfully requested.

Conclusion

Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (612) 373-6911 to facilitate prosecution of this application.

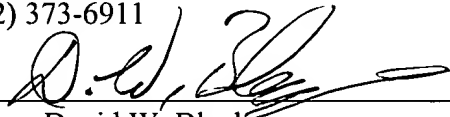
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Respectfully submitted,

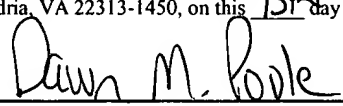
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Date December 15, 2004 By   
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**CERTIFICATE UNDER 37 CFR 1.8:** The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: MS Amendment, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 15<sup>th</sup> day of December, 2004.



Name



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